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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Docket No. 0074-497771

KEITH VIVIAN ALEXANDER

Confirmation No. 7888

Application No. 10/755,028

:

Filed: January 9, 2004

:

For: SPRINGLESS TRAMPOLINE WITH
CONTRASTING EDGE

:

Commissioner for Patents
Alexandria, VA 22313-1450

Certificate of Mailing Under 37 CFR §1.8(a)

I hereby certify that this correspondence is being deposited on June 14, 2004 with the United States Postal Service as first class mail in an envelope properly addressed to COMMISSIONER OF PATENTS AND TRADEMARKS, Washington, D.C. 20231.

June 14, 2004

Date of Certificate

Frances L. McMenamin
Frances L. McMenamin

CLAIM FOR PRIORITY

Applicant in the above-identified application hereby claims the benefit of priority under 35 U.S.C. §119 of New Zealand Application No. 528908, filed October 15, 2003. Pursuant to §119 and 37 C.F.R. §1.55, we are filing herewith a certified copy of the New Zealand Application.

Respectfully submitted,

DANN, DORFMAN, HERRELL AND SKILLMAN
A Professional Corporation
Attorneys for Applicant(s)

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Enclosure: Priority document

CERTIFICATE

This certificate is issued in support of an application for Patent registration in a country outside New Zealand pursuant to the Patents Act 1953 and the Regulations thereunder.

I hereby certify that annexed is a true copy of the Provisional Specification as filed on 15 October 2003 with an application for Letters Patent number 528908 made by KEITH VIVIAN ALEXANDER.

I further certify that pursuant to a claim under Section 24(1) of the Patents Act 1953, a direction was given that the application proceed in the name of BOARD & BATTEN INTERNATIONAL INC.

Dated 26 February 2004.



Neville Harris
Commissioner of Patents, Trade Marks and Designs



NEW ZEALAND PATENTS ACT 1953

PROVISIONAL SPECIFICATION

TRAMPOLINE MAT

I, KEITH VIVIAN ALEXANDER a New Zealand citizen of 65 Middleton Road, Upper Riccarton, Christchurch, New Zealand, do hereby declare this invention to be described in the following statement:



FIELD OF THE INVENTION

This invention relates to the design of a trampoline mat, in particular the edge of the trampoline mat, in the type of trampoline that uses flexible cantilevered rods for springs. An example of such a trampoline is shown in Figure 1.

BACKGROUND TO THE INVENTION

In a trampoline of the type shown in Figure 1 and generally described in US Patent No. 6,319,174, flexible rods act as sprung members between the edge of the trampoline mat, and the frame below the mat. This arrangement is shown in Figure 2 and is described in PCT International patent application WO 03/043704 and New Zealand Patent Application No. 513331. The rods 1 may be connected to the mat by suitable edge fittings 3. The connection may be achieved using a rod 1 having a ball end 4 to be inserted into a corresponding socket in the edge fitting 3. The rod 1 may be connected to the trampoline using sockets 2. The method of capturing the edge fittings 3 is the main subject of this invention

As shown in Figure 3, the edge fittings 3 may be sewn into the mat edge 5 by folding over the mat material, burning a hole 6 in the mat material and sewing the edge fitting 3 inside the mat material.

A significant issue with this method is that the mat material may not be strong enough to cope over time with the forces exerted onto it when the trampoline is used. This may result in the edge of the mat 5 splitting and letting the edge fittings 3 out. Such a result is shown in Figure 4.

Another problem, shown in Figure 5, is that the burnt hole 6 tends to fray, allowing the edge fitting 4 a means of escape. Also, the edge of the mat in this type of trampoline is very visible and is often handled. Once it begins to fray, it becomes unsightly and scratches when handled.

Another issue is that the mat material must be pleated on the underside of the mat during the sewing process. The pleat 7 can be seen in Figure 3.

SUMMARY OF THE INVENTION

It is an object of the invention to provide a trampoline mat with an edge design that answers or reduces at least some of these issues or at least provides the public with a useful choice.

In broad terms, in one aspect, the invention comprises a trampoline including a flexible mat, a plurality of fittings fixed about the peripheral edge of the flexible mat, a plurality of resiliently flexible rods each having a lower end retained in a frame of the trampoline and an enlarged upper end retained in one of the plurality of fittings, and a strap attached to the periphery of the flexible mat to retain the plurality of edge fittings between the strap and the flexible mat, the strap being more wear resistant than the flexible mat and includes a plurality of openings to allow the enlarged upper end of the flexible rods through the strap and into the fittings.

Preferably, the strap is stitched to the periphery of the flexible mat.

Preferably, the strap is wrapped around the peripheral edge of the mat and encloses the fittings.

Preferably, the stitch lines are set close to the fittings to secure the fittings between the strap and the flexible mat.

Preferably, the strap includes a visual indicator to highlight the periphery of the flexible mat.

Preferably, the visual indicator is at least one coloured band. The strap itself may be coloured or alternatively a separate coloured material may be fixed to the mat, for example by being sewn over the periphery of the flexible mat.

In broad terms, in another aspect, the invention comprises a trampoline including a flexible mat, a plurality of fittings fixed about the peripheral edge of the flexible mat, a plurality of resiliently flexible rods each having a lower end retained in a frame of the trampoline and an enlarged upper end retained in one of the plurality of fittings, and visual indicator located at the periphery of the flexible mat to provide a user with a visual indication of the edge of the flexible mat.

Preferably, the visual indicator is a strap of coloured material that is sewn over the periphery of the flexible mat. This colour could be chosen to contrast the colour of the flexible mat for optimum visibility by the user. For example, if the flexible mat is a black material, the visual indicator could be chosen to be yellow.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the invention will be described with reference to the accompanying drawings, of which:

Figure 1 shows a trampoline with flexible cantilever rods as spring elements;

Figure 2 shows the attachment of the rod spring elements in the trampoline mat and frame;

Figure 3 shows the edge fittings sewn into the edge of the earlier trampoline mat;

Figure 4 shows an example of the edge fittings breaking out of the earlier trampoline mat;

Figure 5 shows the edge fittings breaking out the burnt hole on the underside of the earlier trampoline mat;

Figure 6 shows the webbing strap with pre-cut holes prior to attachment to the mat;

Figure 7 shows the webbing strap as sewn into the mat edge as viewed from below;

Figure 8 shows the webbing strap as sewn into the mat edge as viewed from above;

Figure 9 shows the details of the webbing strap construction and attachment;

Figure 10 shows an edge fitting after being sewn into the webbing strap;

Figure 11 shows the trampoline mat with the webbing strap as viewed from below;

Figure 12 shows one visual edge arrangement using PVC;

Figure 13 shows a visual edge arrangement using three multicoloured bands; and

Figure 14 shows a visual edge arrangement using three-bands of a high contrast colour.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Several methods may be employed but a method that has been found satisfactory is described below, with particular reference to Figures 6 to 8:

Select a material 8 that is available in strip form; that is more robust, more flexible and preferably has a softer touch than the mat material

Preferably, pre-cut the holes 6 so that the hole edges can be properly finished while the material 8 is still in strip form.

Sew the strip material 8 to the edge 5 of the mat material.

Fold the strip material 8 over the edge fitting and sew the edge fitting in place. This completes the manufacture.

From Figure 7, showing the view of the trampoline edge from below, the stitches 9 attaching the strip material 8 to the edge 5 of the mat are visible.

A diagram of the design is shown in Figure 9, with actual implementations shown in Figure 10, Figure 11 and Figure 12.

Optionally, the trampoline may include on the top surface of the seam, another, narrower strip that provides a visual edge to the jumping surface. One form of this coloured edge is coloured strip 10 shown in Figure 8.

Other examples of visual edge arrangements are shown in Figure 13 and Figure 14. In these examples, the visual edge comprises multiple coloured bands 10. In Figure 13, the colour of the bands 10 provide an opportunity for the manufacturer to apply his characteristic colours to the mat. In Figure 14, the bands 10 are of the same colour, but this time, the bands 10 are chosen to be of a colour that contrasts the dark mat surface.

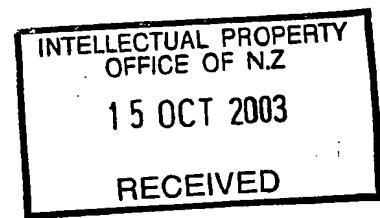
The visual edge could also be formed using paint or dye that is used to highlight the peripheral edge of the mat. The paint or dye used in this option will have to be able to withstand the weather and handling that the mat will be subjected to in use. A further manner to implement the visual edge could be stitches that form a band around the peripheral edge of the mat. The material used for the visual edge stitching should be wear resistant and also highly visible.

An advantage of having this trampoline edge construction is that it provides a perceived edge for the users or a clear boundary to help with orientation. This overcomes the perception disadvantage with trampolines that use flexible cantilevered rods as springs, also known as soft edge trampolines, where the spring elements (rods) and the frame are below the mat edge and are out of sight.

The edge of the soft-edged trampoline is also an area of high use as people slide on and off. It also flexes regularly when it is bounced on. This makes it rather more vulnerable to wear than the mat edge of a conventional trampoline. An example of a soft-edged

mat without a visual edge is shown in Figure 4. By making the visual edge material of a robust nature, for example PVC, extra protection can be afforded to the vulnerable mat material edge. An example PVC visual edge is shown in Figure 12.

There are also plastic fittings sewn into the edge of the trampoline mat. As these fittings are somewhat vulnerable to UV deterioration, by making the visual edge somewhat UV-resistant, an increased UV protection could be provided for the fittings.



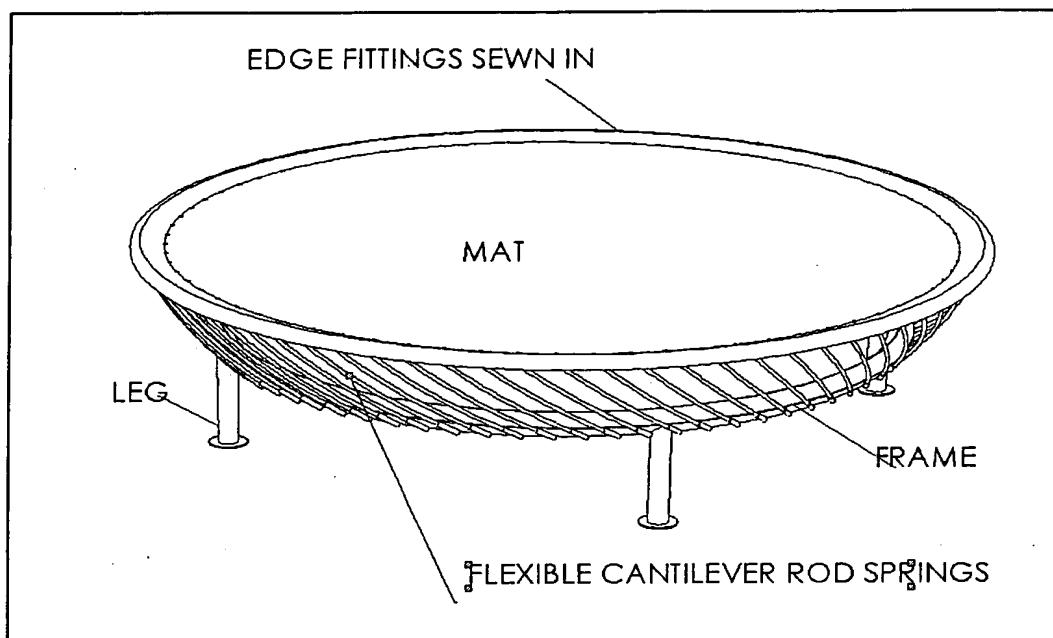


Figure 1

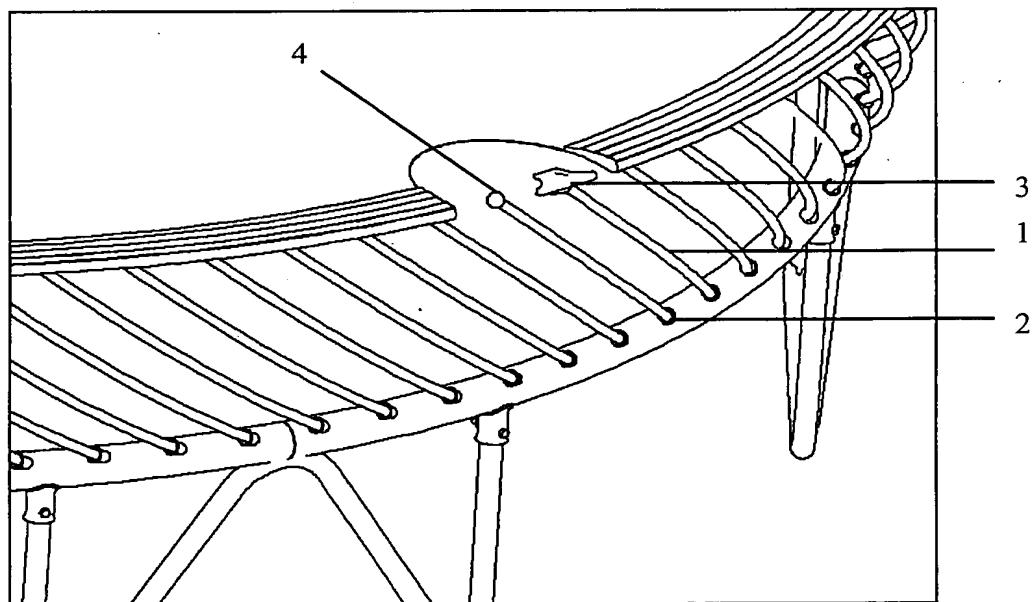


Figure 2

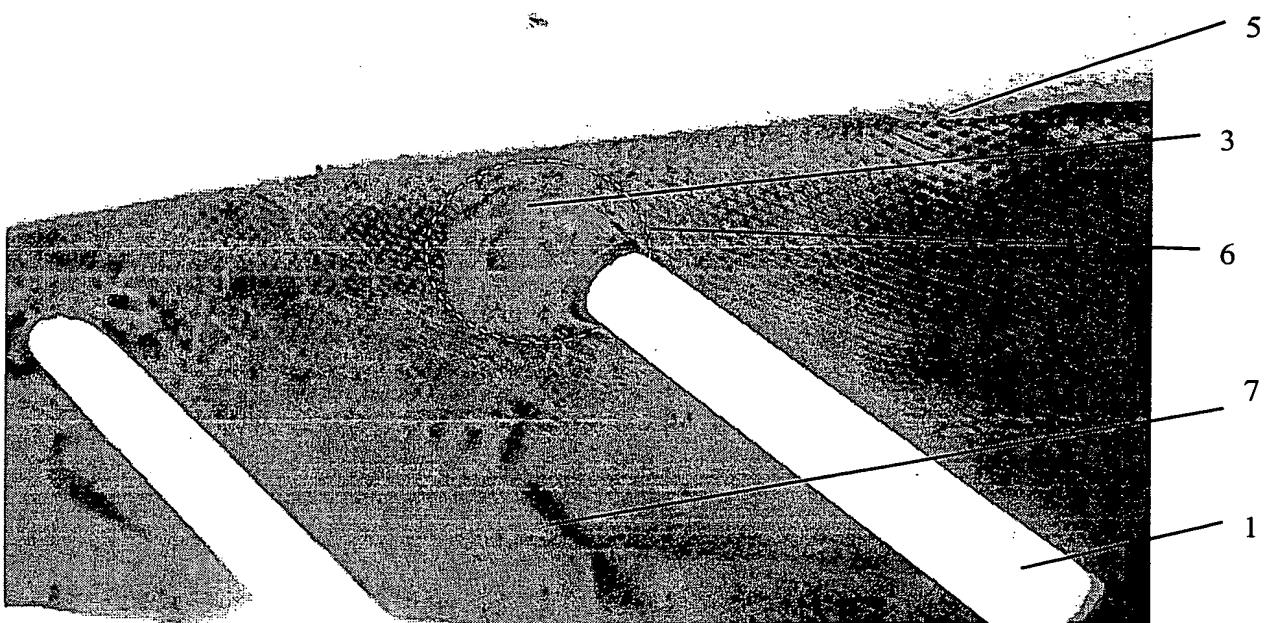


Figure 3

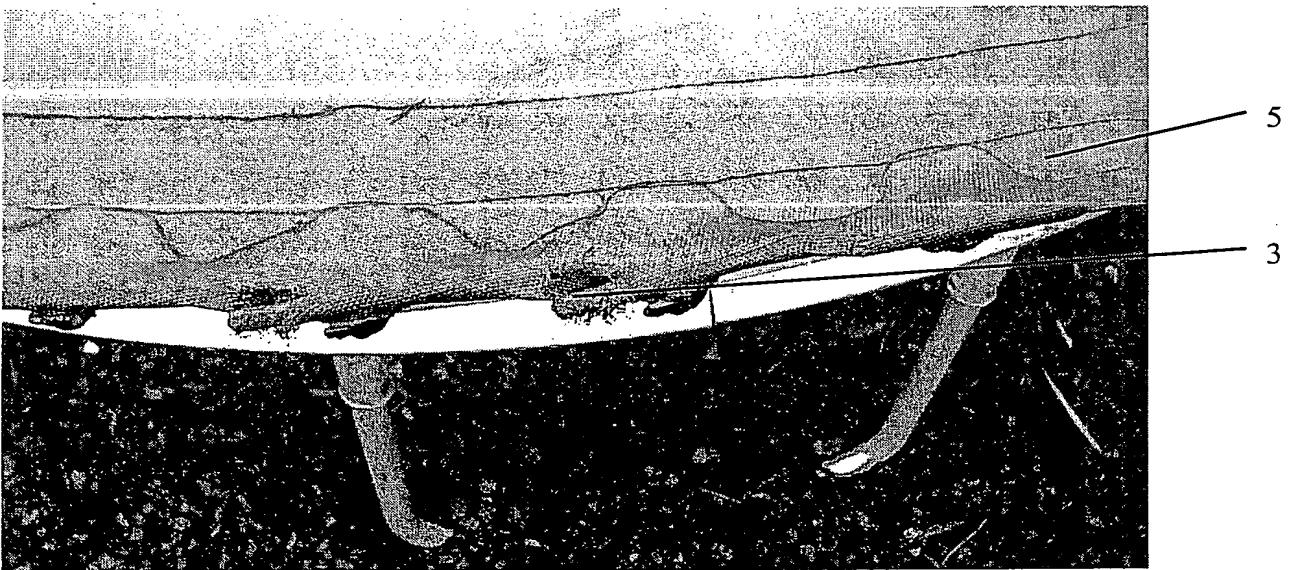


Figure 4



Figure 5

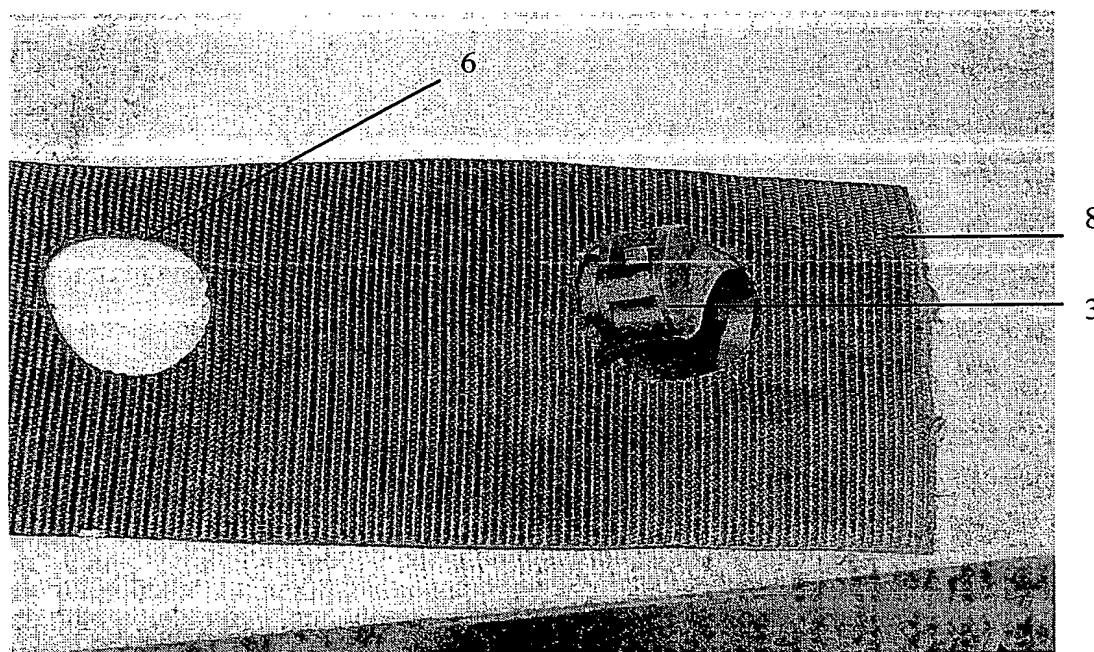


Figure 6

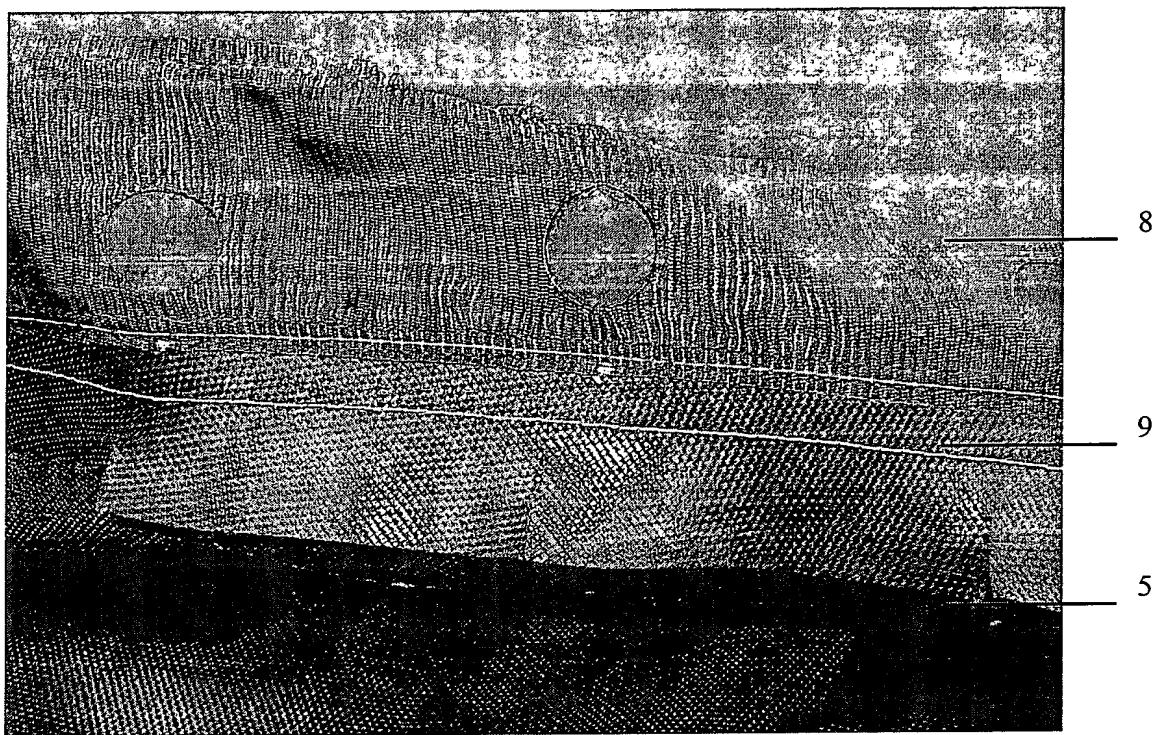


Figure 7

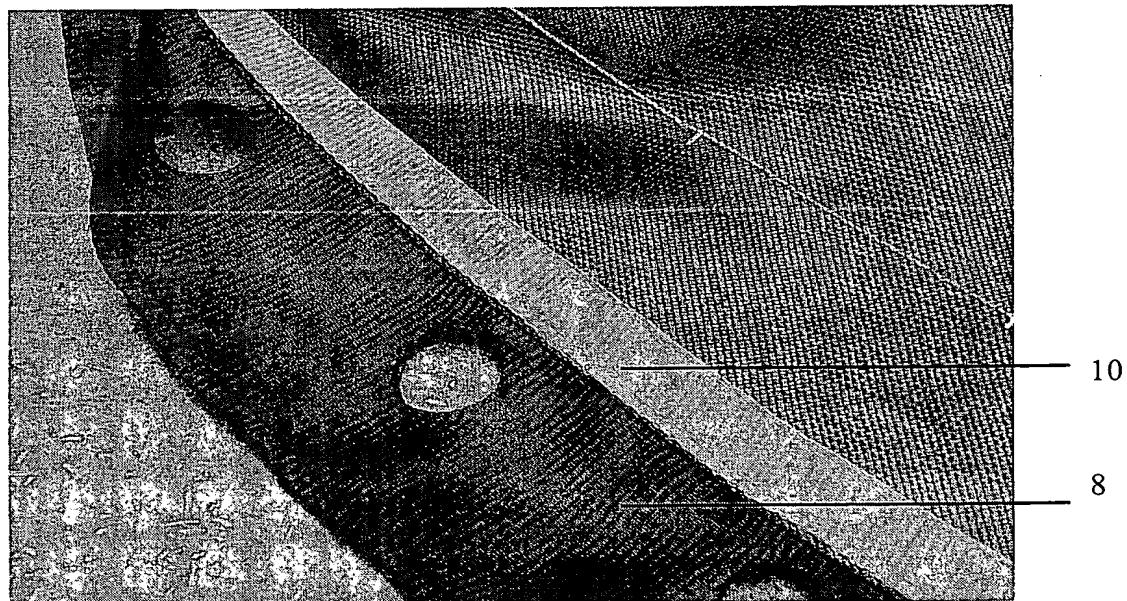


Figure 8

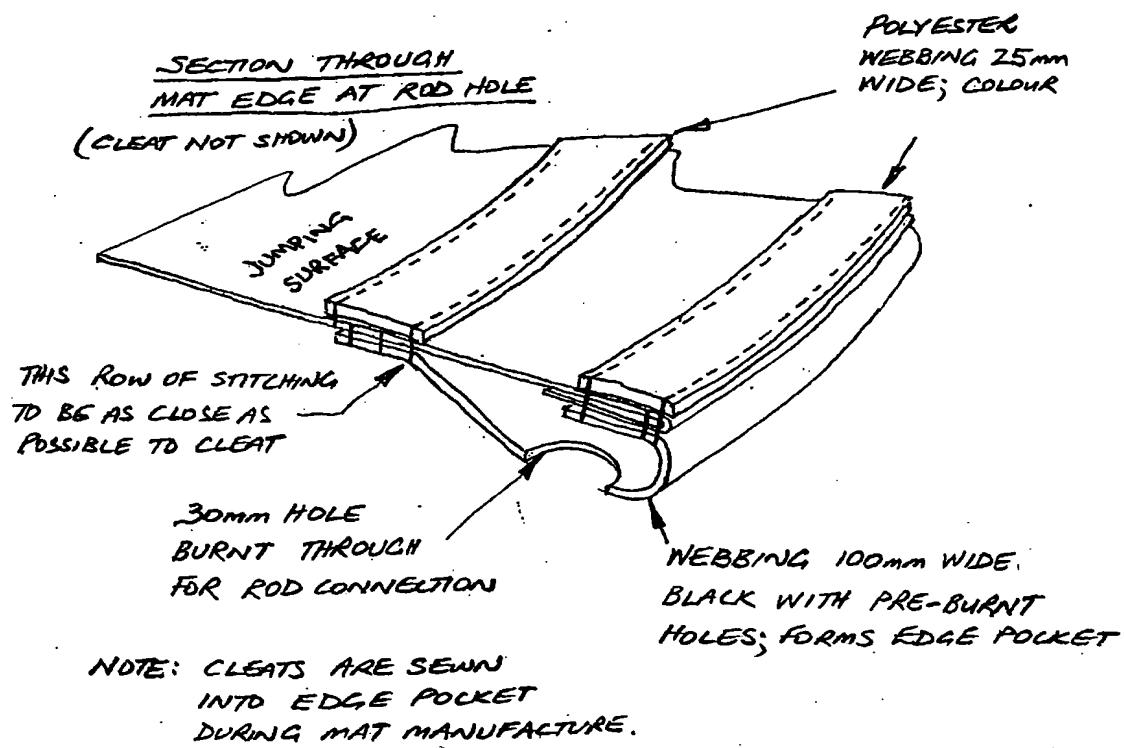


Figure 9

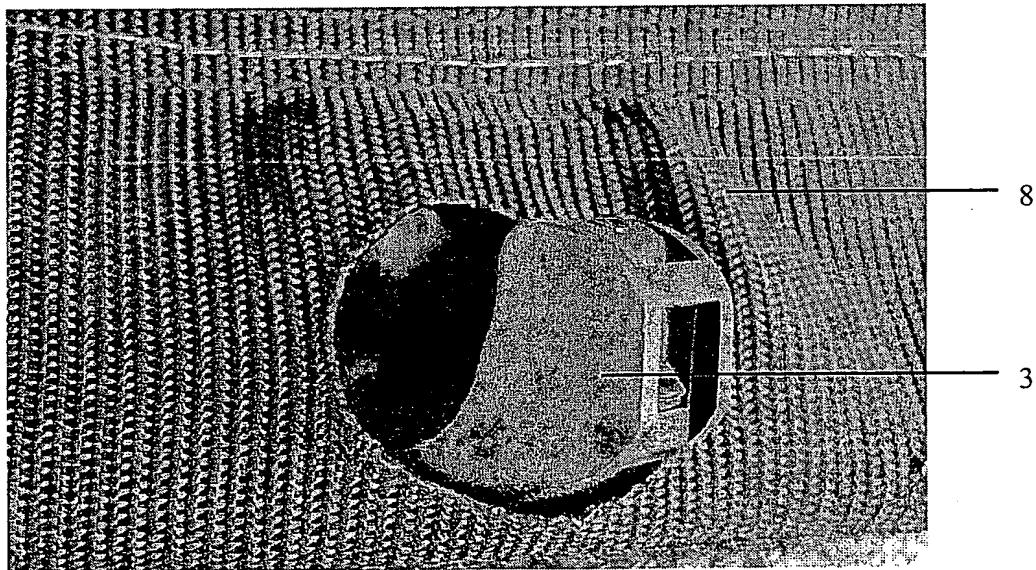


Figure 10

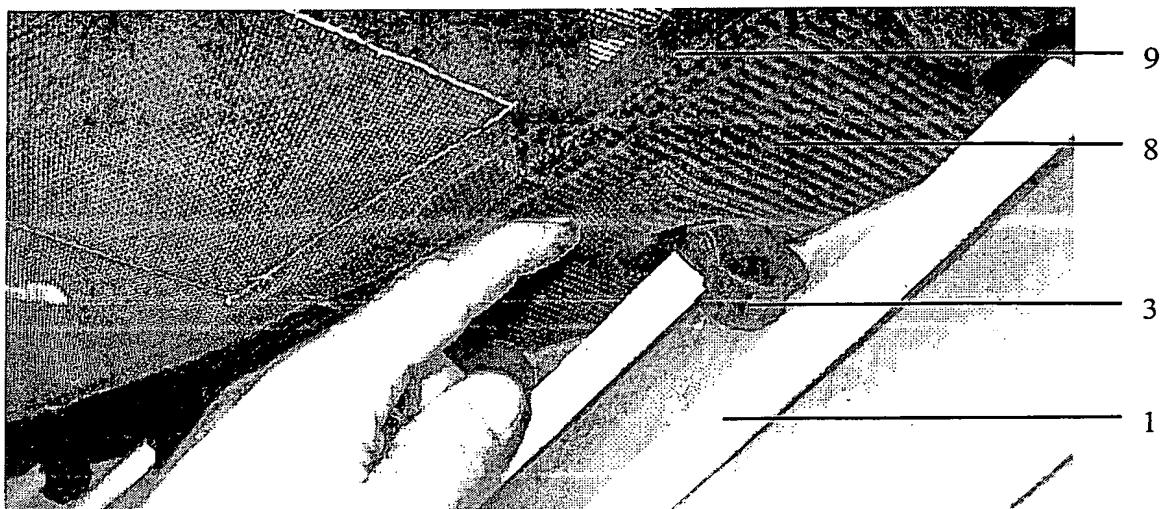


Figure 11

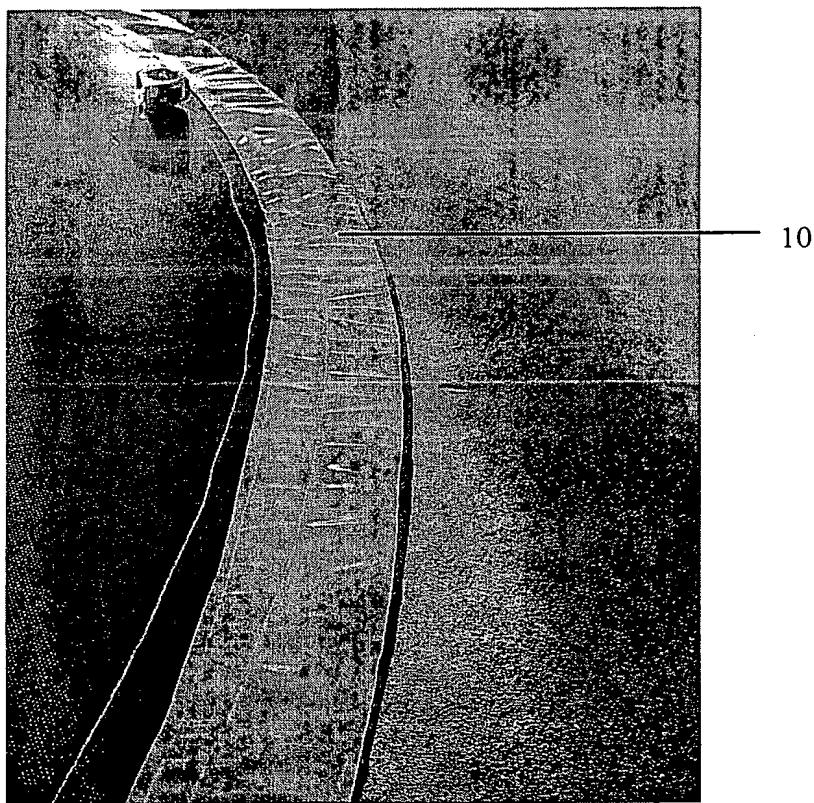


Figure 12

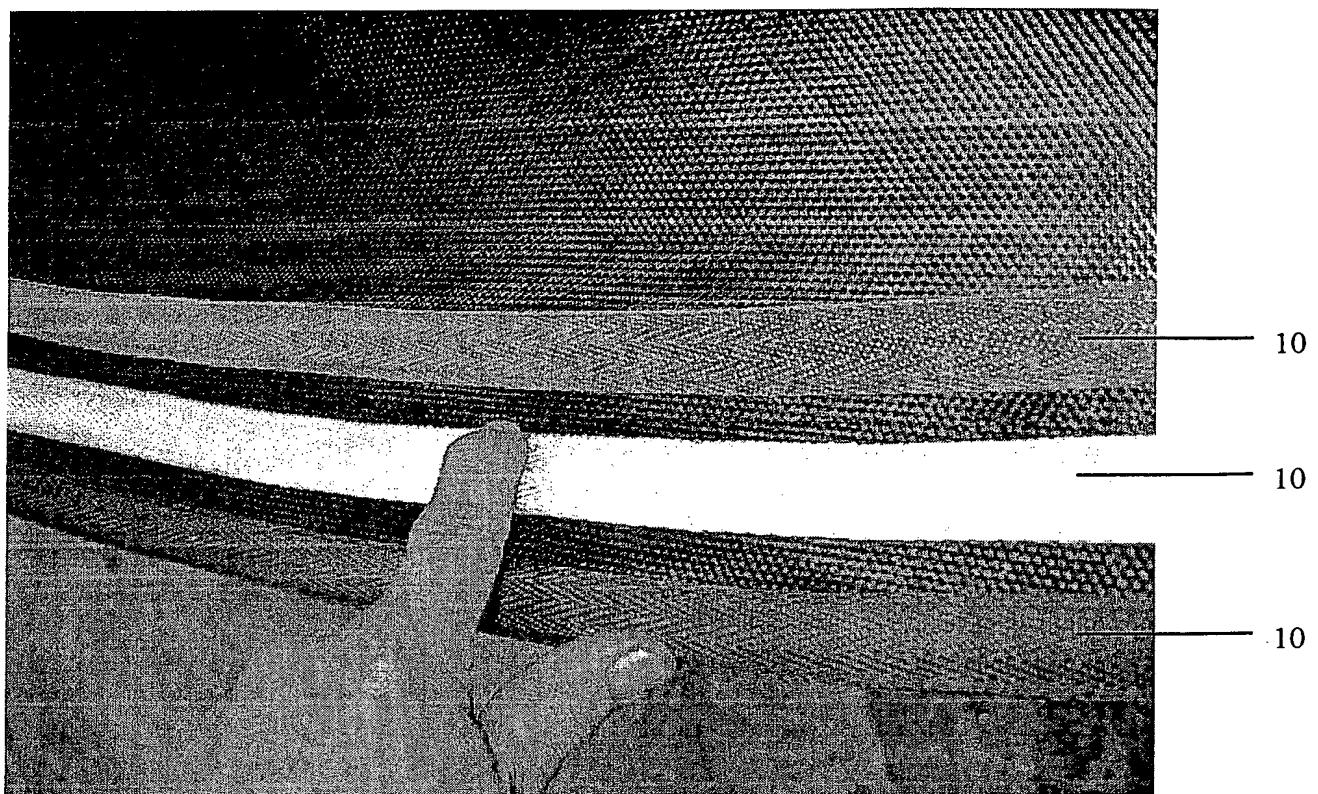


Figure 13

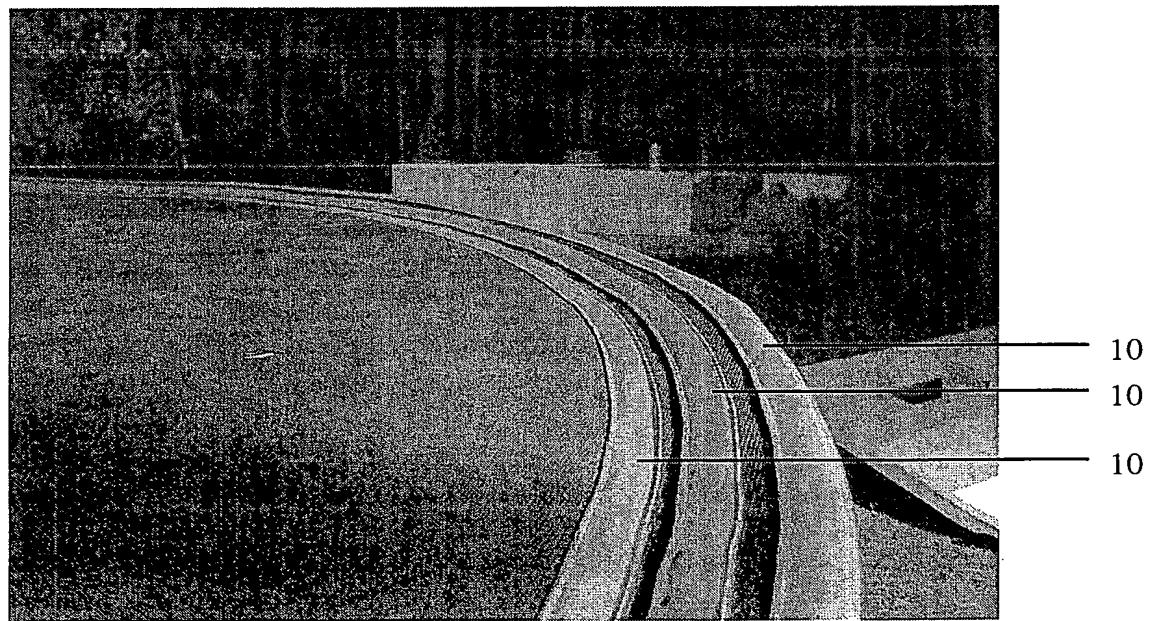


Figure 14